

Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/IL05/000164

International filing date: 10 February 2005 (10.02.2005)

Document type: Certified copy of priority document

Document details: Country/Office: IL
Number: 160325
Filing date: 11 February 2004 (11.02.2004)

Date of receipt at the International Bureau: 15 March 2005 (15.03.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse



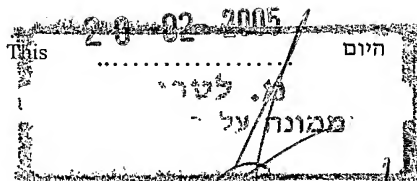
מדינת ישראל
STATE OF ISRAEL

Ministry of Justice
Patent Office

משרד המשפטים
לשכת הפטנטים

This is to certify that
annexed hereto is a true
copy of the documents as
originally deposited with
the patent application
particulars of which are
specified on the first page
of the annex.

זאת לתעודה כי
רצופים בזה העתקים
נכונים של המסמכים
שהופקדו לכתחילה
עם הבקשה לפטנט
לפי הפרטים הרשומים
בעמוד הראשון של
הנספח.



רשם הפטנטים

Commissioner of Patents

נתאשר
Certified

לשימוש הלשכה
For Office Use

בקשה לפטנט
Application For Patent

מספר: Number	160325
תאריך: Date	11-02-2004
הוקדם/נדחה: Date/Post-dated	

אני, (שם המבקש, מענו ולגבי גוף מאוגד - מקום התאגדותו)
I, (Name and address of applicant, and in case of body corporate-place of incorporation)

ספיר טל, אזרח ישראלי מרח' הבנים 22, כפר סירקין 49935, ישראל
Sapir Tal, Israeli Citizen of 22 Habanim Street, Kfar Sirkin 49935, ISRAEL

בעל אמצאה מכח הדין ששמה הוא
Owner, by virtue of Right of Law of an invention the title of which is

כלי נשק ידני

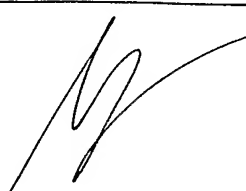
Handheld weapon.

(בעברית)
(Hebrew)

(באנגלית)
(English)

Hereby apply for a patent to be granted to me in respect thereof.

מבקש בזאת כי ינתן לי עליה פטנט

בקשת חלוקה * Application of Division		בקשת פטנט מוסף * Appl. for Patent of Addition		דרישת דין קדימה * Priority Claim	
מבקשת פטנט from application		לבקשה/לפטנט to Patent/Appl.		מספר/סימן Number/Mark	מדינת האירוע Convention Country
No. _____	מס' _____	No. _____	מס' _____		
Dated _____	מיום _____	Dated _____	מיום _____		
P.O.A.: General filed in case D38300		* יפוי כח: כללי חוגש בעניין			
C. 151796		המען למסירת מסמכים בישראל Address for Service in Israel			
REINHOLD COHN AND PARTNERS Patent Attorneys P.O.B. 4060, Tel-Aviv		ריינהולד כהן ושותפיו עורכי פטנטים ת"ד 4060, תל-אביב			
		חתימת המבקש Signature of Applicant		היום 11 בחודש February שנת 2004 This of Year	
		בשם המבקשים, ריינהולד כהן ושותפיו ע"י: -			
				לשימוש הלשכה For Office Use	

טופס זה כשהוא מוטבע בחותם לשכת הפטנטים ומושלם במספר ובתאריך ההגשה, הנו אישור להגשת הבקשה שפרטיה רשומים לעיל.
This form, impressed with the Seal of the Patent Office and indicating the number and date of filing, certifies the filing of the application the particulars of which are set out above.

* מחק את המיותר
Delete whatever is inapplicable

כלי נשק ידני

Handheld weapon

Sapir Tal

ספיר טל

C. 151796

HANDHELD WEAPON

FIELD OF THE INVENTION

The present invention generally relates to handheld weapons which in connection with Martial Arts are often referred to as '*self defense weapons*', suitable for protecting a victim against a barehanded assaulter or one carrying a
5 cold handheld weapon, e.g. a knife, and further for practicing a non-lethal attack on a potential attacker, or in order to gain control over an individual without having to apply excessive force.

BACKGROUND OF THE INVENTION AND PRIOR ART

The increase in violent crime and the need for law officers and the like to
10 control individuals, result in that more people carry different types of weapons e.g. knives, firearms and other deadly weapons which form potential danger also to the victim and to the environment, not to mention the liability behind such acts. There is thus an increasing need for less-then lethal handheld weapons for warding-off an attacker with possibly injuring the attacker, as in the case of self
15 defense, to thereby allow the victim to flee, or for controlling an individual, e.g. for carrying out an arrest by law enforcement personnel, etc.

Many typed of handheld self defense implements have been proposed. Some of which are in the form of clubs or batons held by the defender. However, such devices are prong to be grasped by a potential attacker whereby he may be
20 able to wrench the device from the defender's hands and in turn expose the defender to more danger. Thus, it is desired to provide a small device which may be inconspicuously carried. However, compact self defense weapons are useful,

if at all, in striking defensive blows on the attacker, and not in use in warding-off an attack, like in the case of parrying knife blows. Furthermore, such compact devices are usually not fitted for controlling an individual, i.e. applying some pain to a person for carrying out an arrest, etc.

5 U.S. Patent Serial No. 5,829,643 discloses a self defense device including a grasping member adapted for grasping thereof in a user's hand, a plurality of spaced spikes protruding downward from the grasping member, and an end spike protruding from a second end of the grasping member. A self-defense chemical irritant is disposed within a hollow interior chamber of the grasping member and
10 an actuator mechanism is provided at a first end of the grasping member for effectuating release thereof. The grasping member alternatively functions as key-chain wherein a key-ring is provided at the second end thereof.

U.S Patent Application No. 2003/0109315 discloses a hand-held personal defense weapon, including an elongate grip for being held in and grasped by a
15 closed hand of a user and first and second enlarged, solid impact elements formed of a hard, durable material carried on first and second opposed ends of the grip, each of the impact elements including a distal impact zone of reduced surface area for permitting the weapon to be swung in either a forehand, backhand, downward or uppercut stroke against an assailant.

20 U.S. patent No. 5,556,003 discloses a hollow housing defining an elongate handgrip including a strike bar connected to the housing and extending forwardly in spaced relation from the handgrip so that the hand of the user may surroundingly grip the handgrip with the strike bar exposed on the outside of the hand. The strike bar serves as a visible deterrent to an attacker may be used as a
25 defensive weapon against the attacker. Fitted within the housing there is an aerosol canister of a defense fluid, such as tear gas and a battery-powered siren. The apparatus further includes a movable actuator button for selectively activating the alarm or the alarm and the canister of defense fluid.

WO9007959 discloses a hand weapon comprising a cudgel with a central
30 hand grip portion and cylindrical striking end portions separated from the hand

grip portion by stop surfaces. The hand grip portion has a finger grip portion and first and second abutment surfaces are adapted to be engaged by the tip of the thumb and the heel of the hand when the hand weapon is in use. A thong is adapted to be passed through an aperture in the abutment surface which engages
5 the heel, the thong being adapted to be passed about the user's fist to prevent accidental loss.

U.S. Design Patents Nos. 304,063 and 352,339 discloses handheld devices comprising a gripping portion with a spike projecting therefrom. U.S. Design Patents Nos. 324,610 and 365,622 disclose a handheld self defense weapon
10 comprising a gripping portion and finger protection loops. Some of the above, are fitted with a connecting means for attaching keys thereto.

It is an object of the present invention to provide a novel handheld self defense weapon which is compact and easily concealeable on the one hand and, on the other hand is useful both as a defense article for stopping parrying knife
15 (or other items) blows and for delivering an opponent a debilitating yet non-lethal blow, thus allowing the user of the hand weapon to gain control and compliance of an opponent without unnecessary or excessive force.

SUMMARY OF THE INVENTION

The present calls for a fist-held weapon suited for stopping knife and other
20 items attacks, as well as for conveying debilitating yet non-lethal blows and for applying concentrated pain in order to gain control over an individual without having to apply excessive force to an opponent.

According to the present invention there is provided a handheld defense weapon comprising a hand grip portion fitted at a first end thereof with a first
25 spike and at a second end thereof a second spike, said spikes facing in the same direction and a third spike at the first end extending at an opposite direction.

According to some embodiments of the invention the weapon may further comprise some other functional portions, for example:

- at least one finger ridge extending between said first and second spikes;
- a fourth spike projecting between the index finger and the middle finger, said fourth spike facing in the same direction as the first and second spikes;
- a bulging portion at either end, whereby when the weapon is gripped said bulging portion laterally projecting from a fist;
- a fifth spike at the second end, whereby when the weapon is gripped said fifth spike laterally projecting from a fist.

10 The weapon may be gripped about the first and third spikes, whereby the weapon may be manipulated between a first gripping position where it is grasped by an individual's fist over the hand grip portion, and a second position where it is gripped about the first and third spikes; said manipulation carried out by rotation about the index finger.

15 The weapon may also have any one of additional features, such as:

- being disguised by a fur-like material applied thereto;
- serving as a key holder by attaching a key ring thereto;
- the hand grip portion may further fitted with a utility tool (e.g. one or more of the spikes may be designed as a screwdriver, etc.);
- the hand grip portion may be fitted with a power source and an activating mechanism for illuminating a light emitting element integrated with the weapon;
- the hand grip portion may be fitted with a compartment holding an irritating material (e.g. a tear gas or a skin irritating material) selectively dischargeable;
- the grip portion may be fitted with an audible alert generating module e.g. an electronic circuit or, according to a specific embodiment, the audible alert generating module is a gas discharge horn, optionally activated by discharge of an irritating gas;
- the weapon may be fitted with a blow whistle;

- at least the hand grip portion may be padded.

The design of the weapon renders it suitable also for use as a bag carrier wherein the bag is suspendable from the device by hanging handles of the bag on the first and second spikes.

5 According to another aspect of the present invention there is provided a kit comprising a handheld defense weapon comprising a hand grip portion fitted at a first end thereof with a first spike and at a second end thereof a second spike, said spikes facing in the same direction and a third spike at the first end extending at an opposite direction; and an instructions manual teaching how to
10 use said weapon and how to train using same, where said manual is for example an illustrated publication or a digital carrying media.

BRIEF DESCRIPTION OF THE DRAWINGS

 In order to understand the invention and to see how it may be carried out in practice, some embodiments will now be described, by way of non-limiting
15 examples only, with reference to the accompanying drawings, in which:

Figs. 1A and 1B are a perspective view and a top view, respectively, of an article in accordance with a first embodiment of the present invention;

Figs. 2A and 2B are top views illustrating different embodiments of an article in accordance with the present invention;

20 **Fig. 3A and 3B** are a perspective view and a top view of an article in accordance with still another embodiment of the present invention;

Figs. 4A to 4D are perspective views of different modifications of an article in accordance with embodiments of the invention; and

Figs. 5A and 5B illustrate the weapon in accordance with the present
25 invention in a first gripping position and in a second gripping position, respectively.

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

Turning first to the embodiments seen in Figs. 1A and 1B, there is illustrated a handheld defense weapon generally designated **10** comprising a hand grip portion **12** fitted at a first end thereof **14** with a first spike **16** and at an
5 opposed end **17** with a second spike **18**. Intermediate the first and second spikes there are three finger ridges **20A**, **20B** and **20C** which together with the curved back portion **24** of the grip portion **12** provide a tool for comfortable gripping by an individual's fist.

The distance between the first spike **16** and the second spike **18** is such so
10 as to comfortably accommodate a fist firmly gripping the handle portion **12**. Obviously, the weapon may be provided in different sizes, depending on the hand fist of an individual and for example, it may be manufactured in several sizes, e.g. for young individuals, adults and in extra large size for individuals having large palms.

Further noted at the first end **14** of the weapon **10**, there is provided a third
15 spike **30** extending at an opposite direction with respect to the first spike **16**. The weapon is made of rigid material, e.g. plastic, metal, wood, etc.

Furthermore, the first and second spikes **16** and **18** respectively, project from the handle portion **12** to an extent such that they project beyond the fisting
20 fingers to thereby protect the fingers of an individual using the weapon while delivering an opponent a blow or whilst stopping a preying attack by an opponent.

The edge of each of the spikes namely **16A**, **18A** and **30A**, respectively may be slightly rounded as in the embodiments illustrated herein the
25 specification or may be pointed.

In use, the device is useful both as a defense article for stopping preying knife blows or blows by other items, and also for delivering an opponent a debilitating yet non lethal blow. Furthermore, a weapon held by an opponent, e.g. a knife over other offensive tools, may be extracted by using one of the spikes of
30 the weapon **10**, typically the second spike **18**.

The weapon 10 may be held at a first gripping position as discussed hereinabove and as illustrated in Fig. 5A, wherein the gripping portion 12 is firmly grasped by an individual's fist 15, and at a second position, as illustrated in Fig. 5B, where a weapon 11 is gripped about the first spike 16 and the second spike 18, with the handle portion 12 projecting between the individual's index finger 17 and middle finger 17', typically with the first spike 16 grasped by the index finger.

In this second gripping position the second spike 18 is suitable for extracting a weapon held by an opponent and further for delivering blows to an opponent.

The device may also be used for applying moderate to severe pain to an individual so as to gain control over the individual without having to apply excessive force. This is obtained by relatively small contact areas at the edges of the spikes. This is suitable for law enforcement personnel for overcoming an individual as well as for allowing a potential victim to flee.

Turning now to the embodiment of Fig. 2A, there is illustrated a weapon 50 which is similar to the embodiment of Figs. 1A and 1B and accordingly, like elements are designated by same reference numbers with a prime indication with the exception that instead of ridge 20A as in Figs. 1A and 1B, there is provided a fourth spike 52 which in the first gripping position is intended for extending between the index finger and the middle finger. It is noticed that the fourth spike 52 is slightly shorter than the first spike 16 and the second spike 18. This arrangement is suitable for improving grip of the weapon and further whilst the weapon is gripped in the second gripping position (i.e. assisting the first and second spikes 16' and 18') the fourth spike 52 provides protection to the individual's index finger. Furthermore, the weapon 50 comprises at its second end 54 a fifth spike 56 which may be used in stab-like blows and further for applying severe pain by engaging an opponent with the pointed edge of this spike.

The weapon 50 is provided adjacent its second end 54 with a hole 58 which may be suitable for attaching a key ring whereby the device serves further as a key holder.

With further reference to Fig. 2B, there is illustrated a self defense weapon generally designated 62 which resembles the previous embodiment disclosed in Fig. 2B with the exception that adjacent the second end 66 there is a rounded bulge 68 whereby when the device is in use it may offer a powerful blow to an opponent or for applying painful pressure on an opponent for controlling him.

The embodiment illustrated in Figs. 3A and 3B illustrates still another embodiment of a weapon in accordance with the present invention generally designated 72 which in fact is a combination of the embodiments previously discussed. The embodiment comprises a gripping portion 74 having an ergonomic shape with a curved back portion 76, two finger ridges 78A and 78B and a fourth spike 80 to be received between the index finger and the middle whilst the weapon is gripped at its first gripping position (i.e. grasped by an individual's fist over the handgrip portion). Furthermore, the weapon 72 comprises first, second, third and fourth spikes 84, 86, 88 and 90, respectively and a bulging portion 92 adjacent the first end 94 of the weapon.

It is appreciated that the tool as illustrated in any of its embodiments disclosed here in the specification may be manipulated between the first gripping position and the second gripping position by swinging it about the individual's index finger with the thumb applying rotation force over the third spike and whilst the remaining fingers are temporarily removed until completing the swinging action, where they then gain gripping force over the third spike.

The weapon 72 in accordance with the embodiment of Figs. 3A and 3B comprises two holes 98 and 100 adjacent the respective ends of the weapon whereby for example, one hole may be used for attaching a key ring thereto and the other hole may be used for introducing a fist thong (not shown).

Turning now to Figs. 4A-4D, there are illustrated further modifications and embodiments of the weapon in accordance with the present invention

wherein, for the sake of exemplifying only, the weapons illustrated in Figs. 4A-4D are referring to embodiments corresponding with that disclosed in connection with Figs. 3A and 3B. However, the artisan will appreciate that the modifications exemplified in connection with Figs. 4A-4D may be applied to any other
5 embodiment and at different combinations thereof.

In the embodiment of Fig. 4A, there is illustrated a weapon in accordance with the present invention generally designated 120 fitted with an illuminating arrangement comprising a battery compartment (not seen in this figure) received within the handle portion 122, an activating switch 124 received within a
10 depression 126, so as to minimize the likelihood of damage to the switch 124 or of unintentional activating thereof, and a like emitting source, e.g. a LED 128. The battery (not shown) may be a "finger-type" or a "cell-like" power source and the battery may be replaceable or not.

In the embodiment of Fig. 4B, there is illustrated a weapon 132 which
15 again, is similar to the embodiment of Figs. 3A and 3B where as at the first end thereof 134 there is provided an irritating gas discharge arrangement comprising a compressed gas canister (not seen) received within the handle portion 136, an activating switch 138 which is also received within a depression 142 to prevent unintentional activation thereof and further, the switch 138 may be fitted with a
20 security latch 144 to prevent unintentional operation thereof. The irritating gas may be a tier gas, a skin irritant or other such known gas or fluid dischargeable through discharge opening 146.

In the embodiment of Fig. 4B, there is further illustrated, at the second
end 152 of the weapon a siren/alarm module powered by a electric power source
25 typically a cell battery or the like received within handle portion 136, and being activated by an activating switch 156 for generating a loud alert audible signal through speaker 158.

Fig. 4C illustrates a weapon 168 in accordance with still another
modification of the invention wherein the weapon is fitted with a key ring 170
30 and the entire weapon is disguised by a fur-like coat 174 applied thereto. This

arrangement provides the weapon with an innocent-like appearance and further, imparting at a friendly-like look. Obviously the fur-like material 174 does not interfere with the sturdy grip of the weapon, in either of its gripping positions.

5 In Fig. 4D, there is illustrated a weapon 180 in accordance with still another modification of the invention wherein instead of a fifth spike as in the previous embodiments, there is provided a utility tool, a flat screwdriver bit 182. Furthermore, the back portion of the gripping portion 188 is padded by a comfortable resilient padding material 190, e.g. foam, rubber, etc.

10 Whilst some embodiments have been described and illustrated with reference to some drawings, the artisan will appreciate that many variations are possible which do not depart from the general scope of the invention, *mutatis, mutandis*.

CLAIMS:

1. A handheld defense weapon comprising a hand grip portion fitted at a first end thereof with a first spike and at a second end thereof a second spike, said spikes facing in the same direction and a third spike at the first end extending at
5 an opposite direction.
2. A handheld defense weapon according to claim 1, further comprising at least one finger ridge extending between said first and second spikes.
3. A handheld defense weapon according to claim 1, wherein the hand grip portion is slightly curved in compliance with an individual's fist anatomy.
- 10 4. A handheld defense weapon according to claim 1, wherein the distance between the first spike and second spike is fitted to the size of an individual's fist.
5. A handheld defense weapon according to claim 1, wherein the spikes extend beyond fisted fingers of an individual fisting the weapon about the grip
15 portion.
6. A handheld defense weapon according to claim 5, wherein the spikes are at least 30 cm. long.
7. A handheld defense weapon according to claim 1, wherein at a gripped position the first and second spikes project beyond an individual's fingers at a
20 fisted position.
8. A handheld defense weapon according to claim 1, wherein there is further provided a fourth spike projecting between the index finger and the middle finger, said fourth spike facing in the same direction as the first and second spikes.
- 25 9. A handheld defense weapon according to claim 8, wherein the fourth spike is slightly shorter than said first and second spikes.
10. A handheld defense weapon according to claim 8, wherein the length of the fourth spike projects beyond the width of an index finger, when the weapon is gripped about the first and third spikes.

11. A hand held defense weapon according to claim 1, wherein the first end is fitted with a bulging portion, whereby when the weapon is gripped said bulging portion laterally projecting from a fist.

12. A hand held defense weapon according to claim 1, wherein either end is
5 fitted with a fifth spike, whereby when the weapon is gripped said fifth spike laterally projecting from a fist.

13. A handheld defense weapon according to claim 1, wherein the weapon may be gripped about the first and third spikes.

14. A handheld defense weapon according to claim 13, wherein the weapon
10 may be manipulated between a first gripping position where it is grasped by an individual's fist over the hand grip portion, and a second position where it is gripped about the first and third spikes; said manipulation carried out by rotation about the index finger.

15. A handheld defense weapon according to claim 1, wherein the weapon is
15 disguised by a fur-like material applied thereto.

16. A handheld defense weapon according to claim 1, wherein a key ring is attachable thereto.

17. A handheld defense weapon according to claim 1, wherein the hand grip portion is further fitted with a utility tool.

20 18. A handheld defense weapon according to claim 1, wherein the hand grip portion is fitted with a power source and an activating mechanism for illuminating a light emitting element integrated with the weapon.

19. A handheld defense weapon according to claim 1, wherein the hand grip portion is fitted with a compartment holding an irritating material selectively
25 dischargeable.

20. A handheld defense weapon according to claim 9, wherein the irritating material is a tear gas.

21. A handheld defense weapon according to claim 1, wherein the grip portion is fitted with an audible alert generating module.

22. A handheld defense weapon according to claim 21, wherein the audible alert generating module is a gas discharge horn.
23. A handheld defense weapon according to claim 22, wherein the horn is activated by discharge of an irritating gas.
- 5 24. A handheld defense weapon according to claim 1, wherein at least the hand grip portion is padded.
25. A handheld defense weapon according to claim 1, wherein a blow-whistle is integrated into the weapon.
26. A handheld defense weapon according to claim 1, useful as a bag carrier
10 wherein the bag is suspendable from the device by hanging handles of the bag on the first and second spikes.
27. A handheld defense weapon according to claim 1, wherein the hand grip portion is fitted with a belt clip.
28. A kit comprising a handheld defense weapon comprising a hand grip
15 portion fitted at a first end thereof with a first spike and at a second end thereof a second spike, said spikes facing in the same direction and a third spike at the first end extending at an opposite direction; and an instructions manual teaching how to use said weapon.
29. A kit according to claim 28, wherein said instructions manual is an
20 illustrated publication.
30. A kit according to claim 28, wherein said instructions manual is a digital carrying media.
31. A handheld defense weapon substantially as herein described and illustrated.
- 25 32. A handheld defense weapon as claimed in any one of the preceding claims, substantially as herein described and exemplified.
33. A new use of a handheld defense weapon, substantially as herein described.

For the Applicants,
REINHOLD COHN AND PARTNERS
By:



Fig. 1A

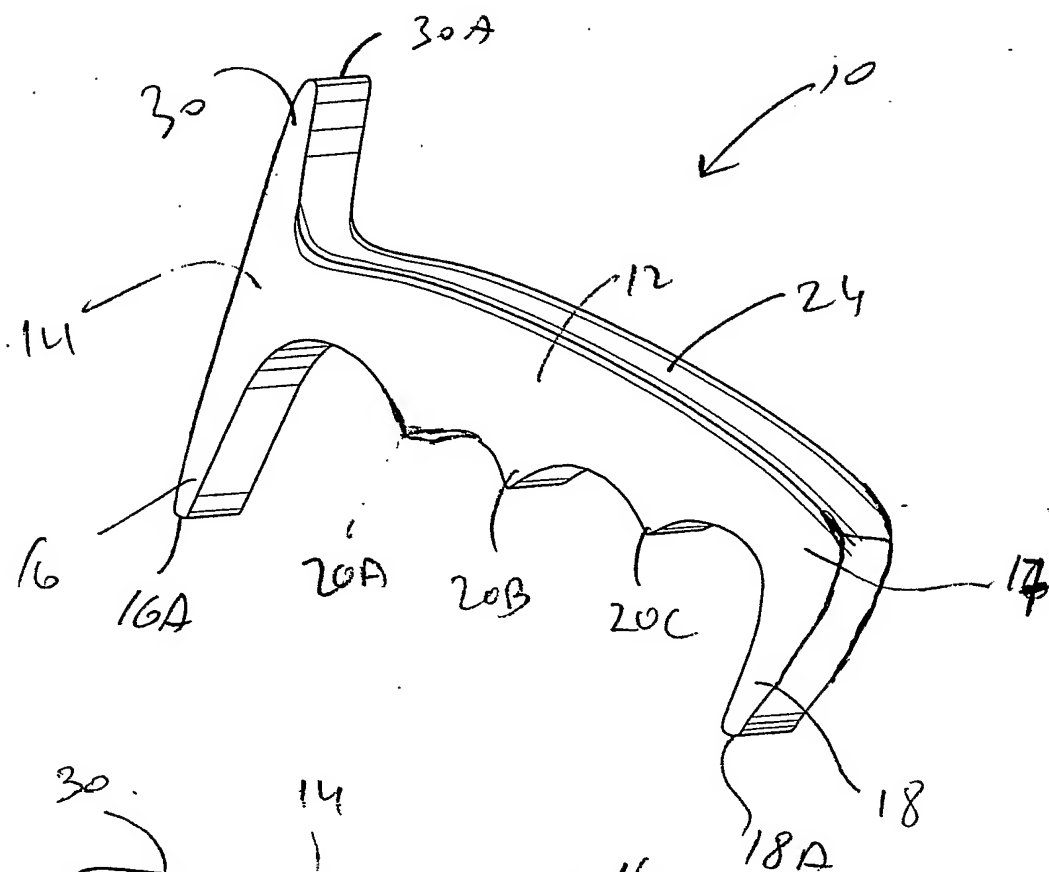


Fig. 1B

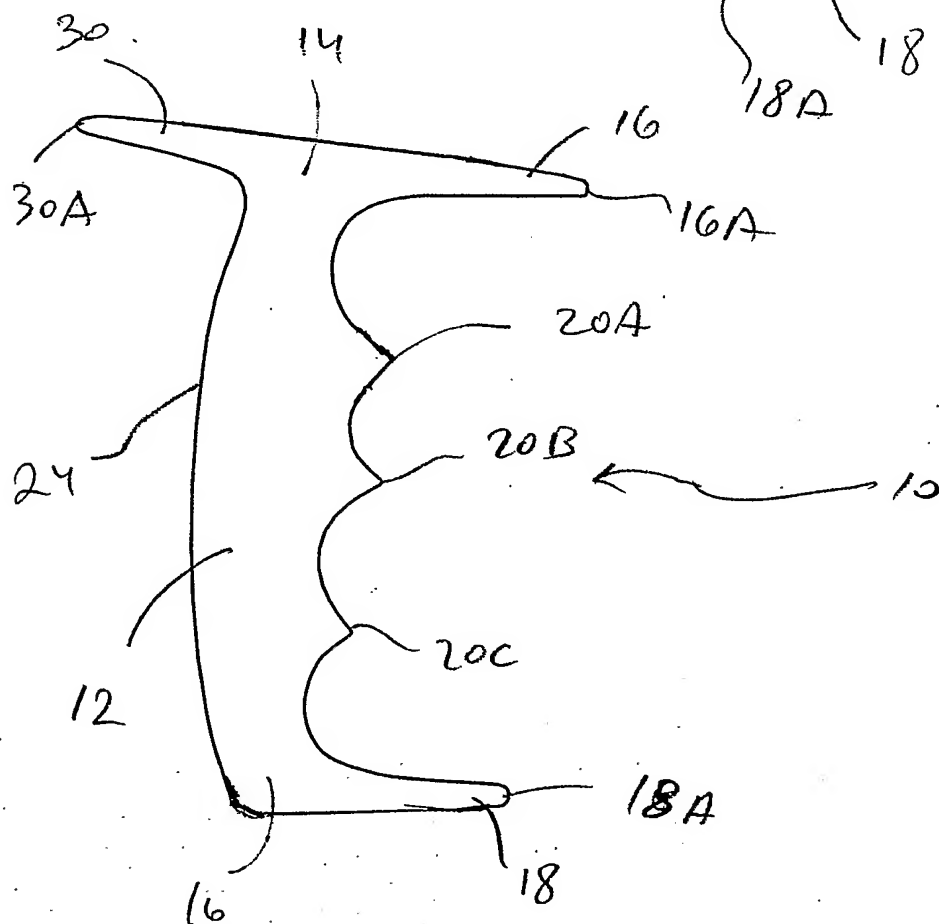


Fig. 2A

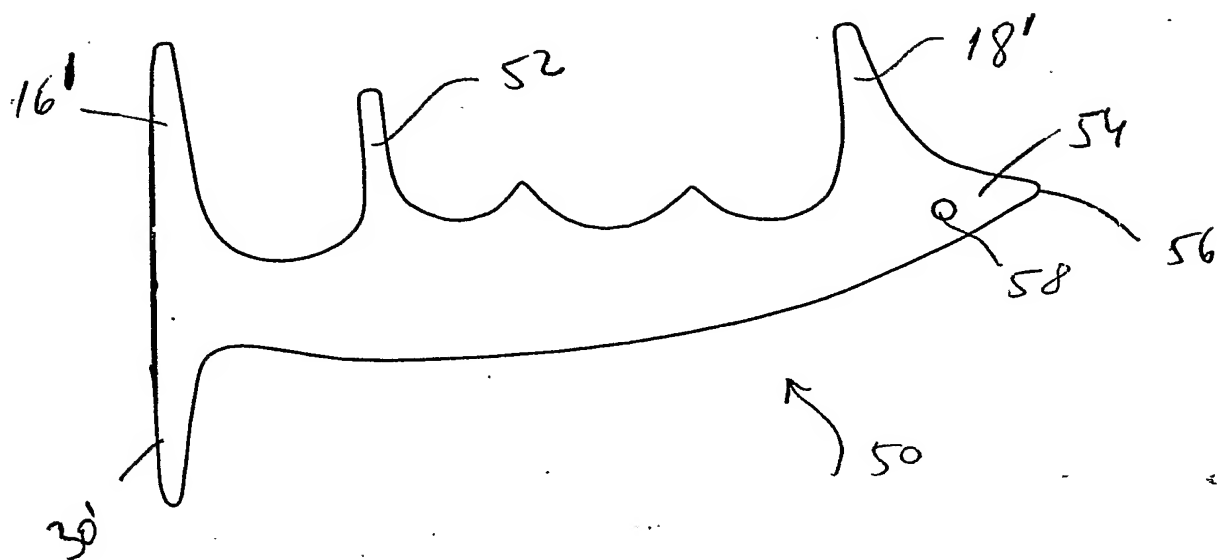


Fig. 2B

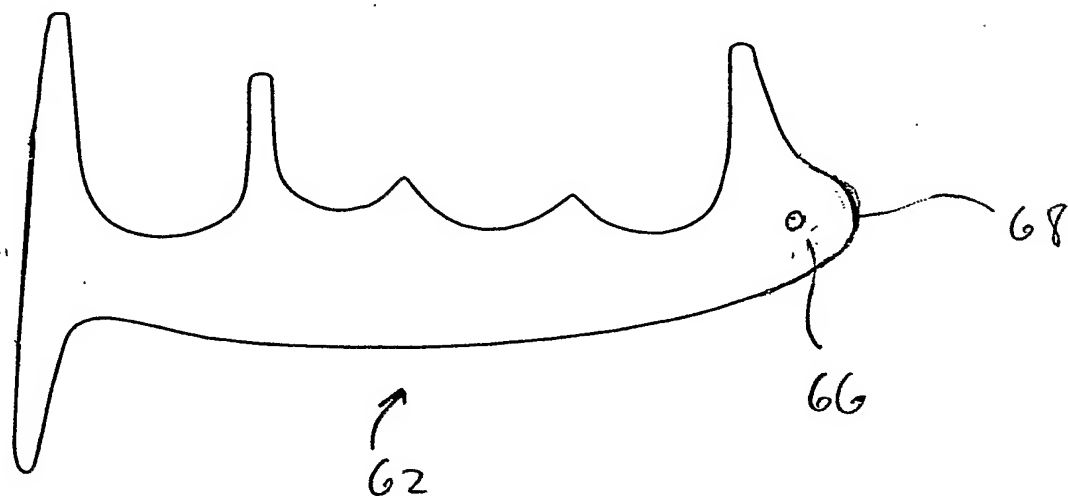


Fig. 3A

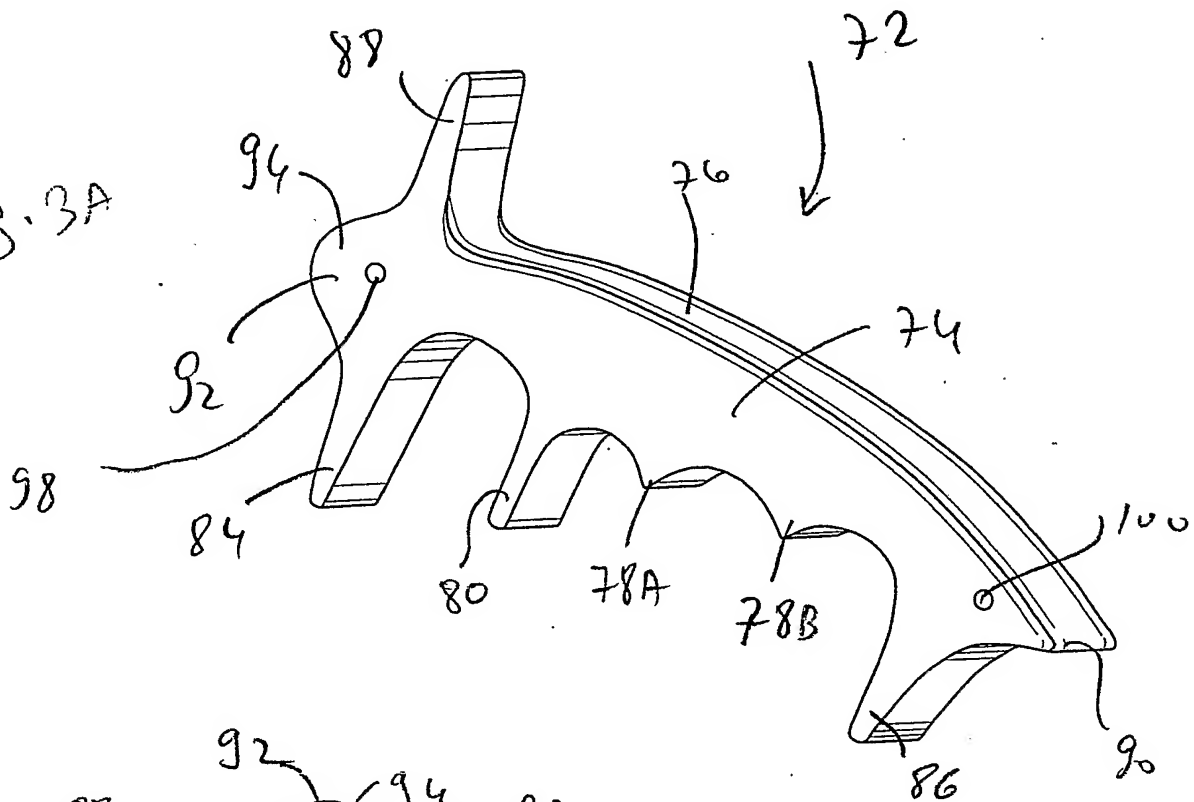


Fig. 3B

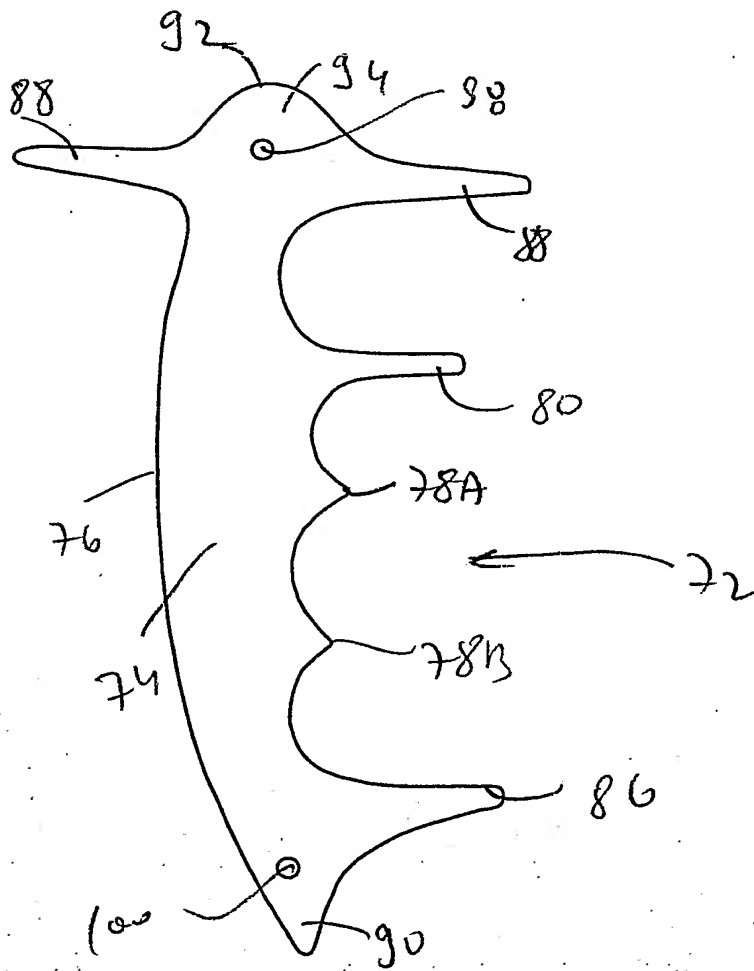


Fig. 4A

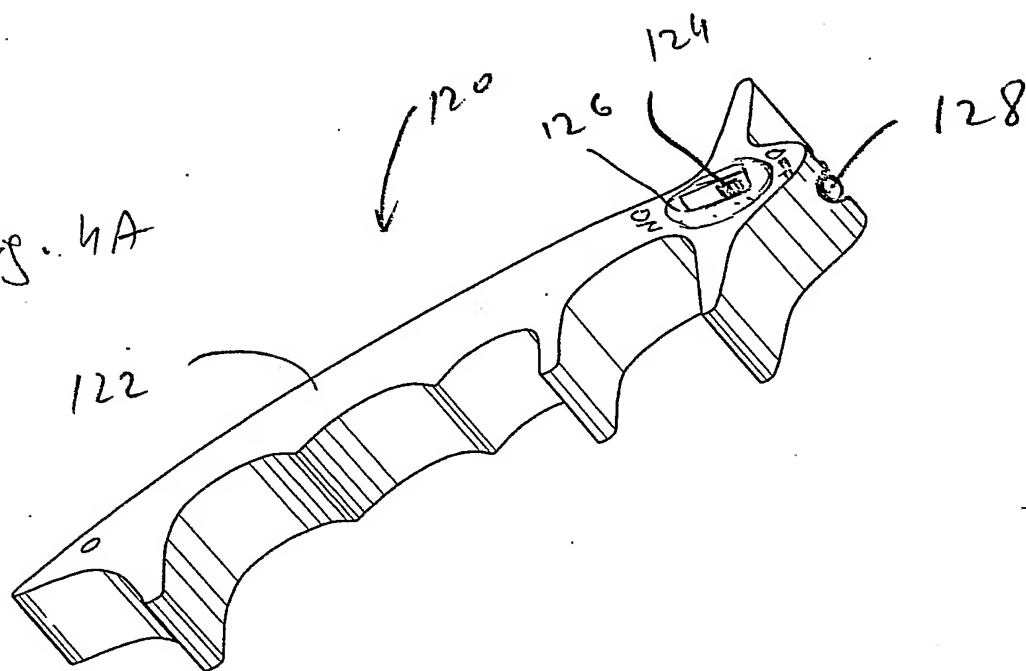
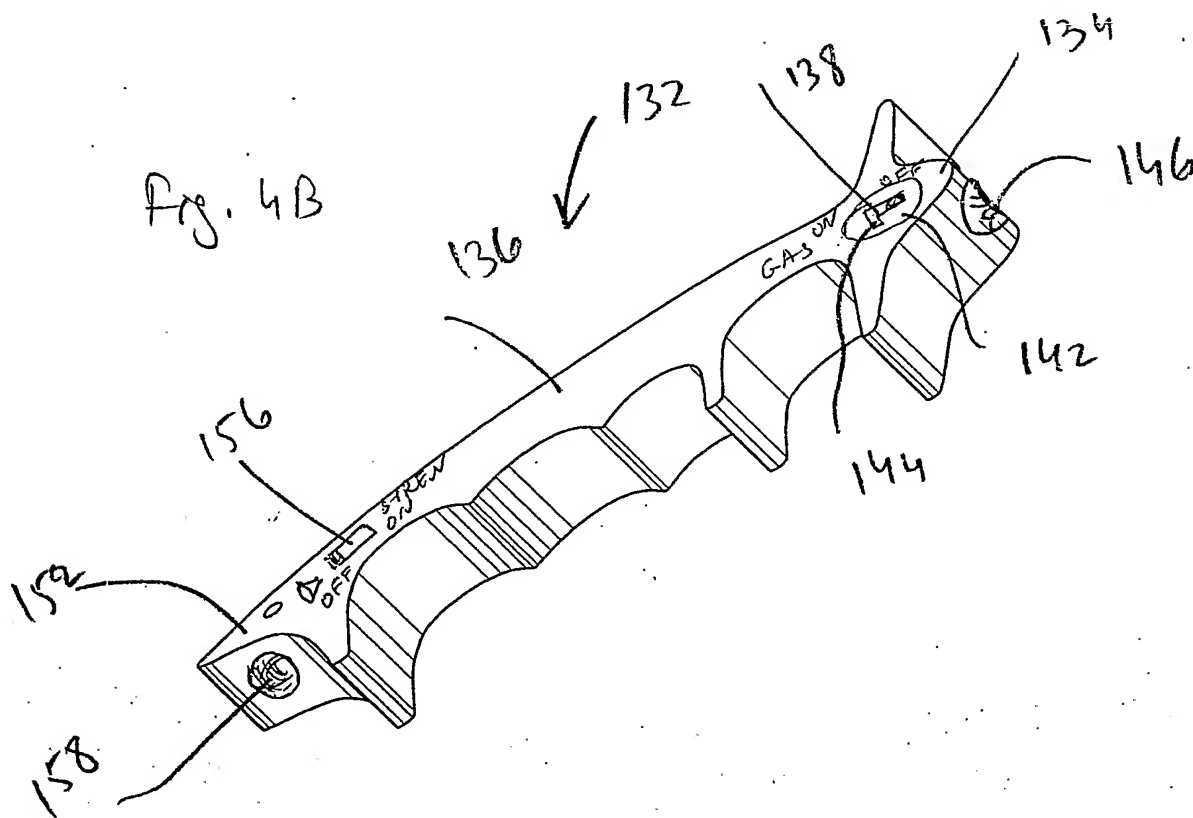


Fig. 4B



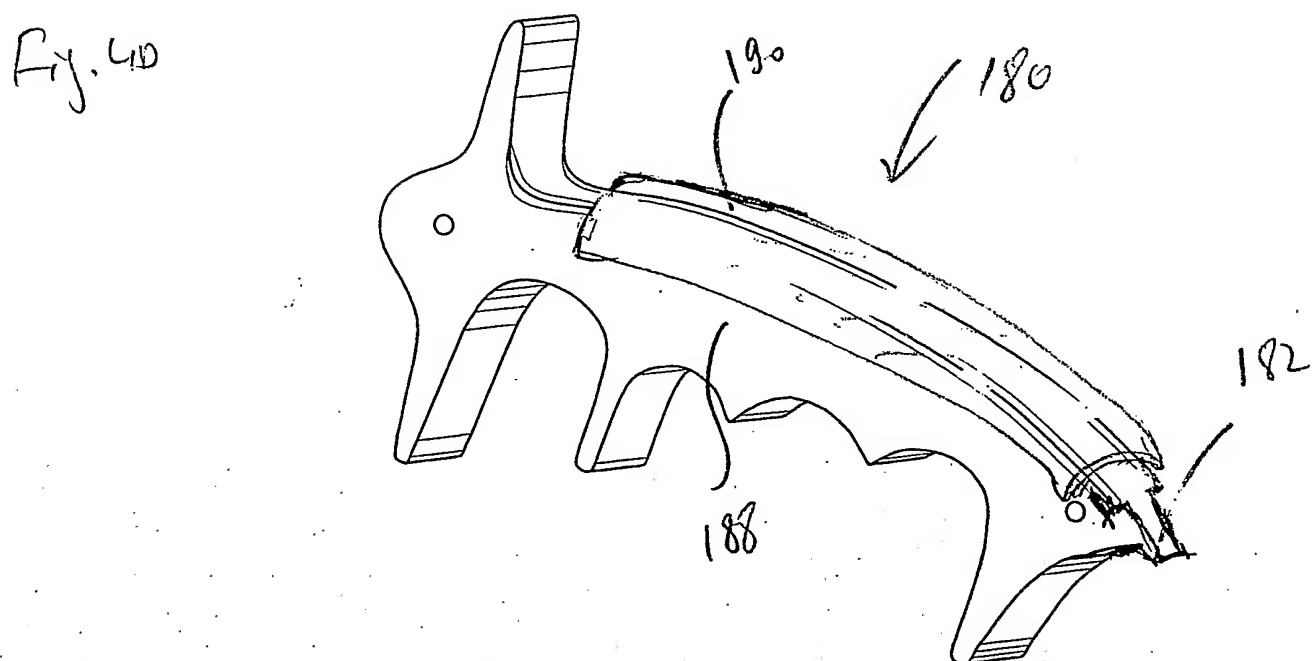
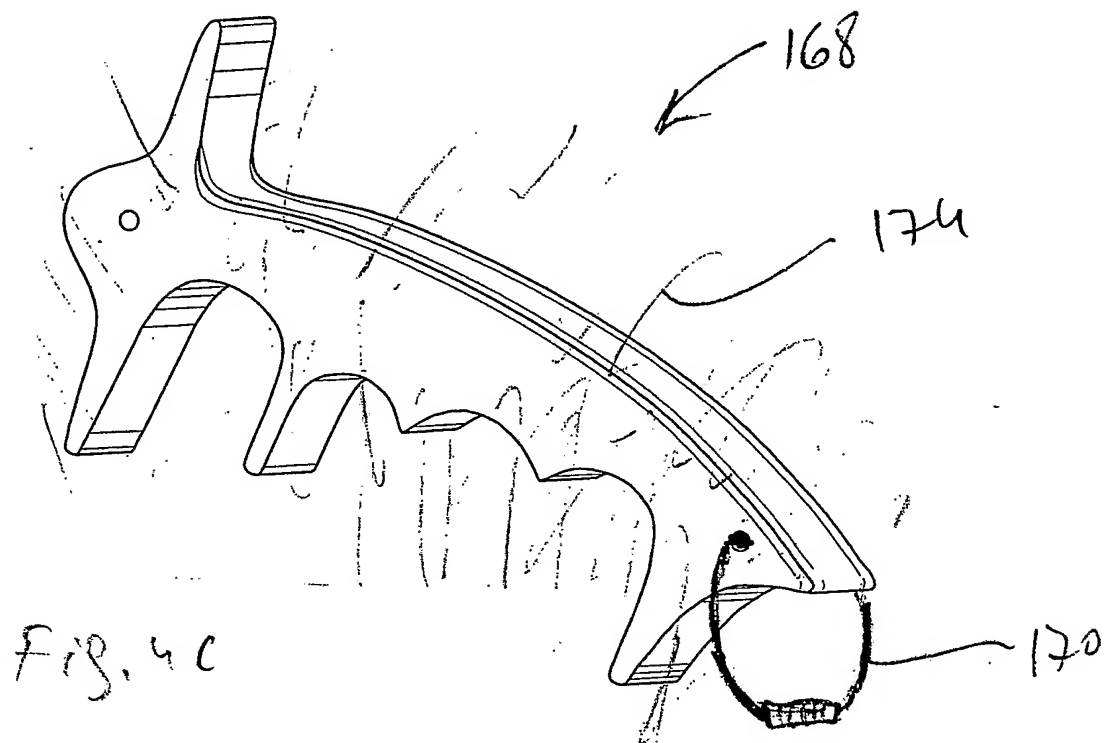


Fig. 5A



Fig. 5B

